

BENDS	18"	22 1/2"	30"	36"	45"	60"
6"-11 1/4"	8"	15"	12"	24"	10"	13"
6"-22 1/2"	8"	18"	12"	24"	15"	13"
6"-45"	8"	30"	12"	24"	15"	15"
6"-60"	8"	30"	12"	24"	28"	15"
12"-11 1/4"	8"	22"	12"	24"	10"	13"
12"-22 1/2"	8"	22"	12"	24"	15"	13"
12"-45"	8"	31"	12"	24"	15"	15"
12"-60"	8"	31"	12"	24"	28"	15"
16"-11 1/4"	TL	28"	30"	24"	28"	15"
16"-22 1/2"	TL	39"	30"	24"	39"	15"
16"-45"	TL	50"	30"	24"	40"	15"
16"-60"	TL	50"	30"	24"	55"	15"
20"-11 1/4"	TL	34"	24"	28"	28"	15"
20"-22 1/2"	TL	48"	24"	28"	39"	15"
20"-45"	TL	74"	24"	28"	55"	15"
20"-60"	TL	74"	24"	28"	55"	15"
24"-11 1/4"	TL	40"	28"	28"	40"	15"
24"-22 1/2"	TL	56"	28"	28"	56"	15"
24"-45"	TL	101"	28"	28"	60"	15"
24"-60"	TL	101"	28"	28"	60"	15"
30"-11 1/4"	TL	48"	34"	30"	48"	15"
30"-22 1/2"	TL	79"	34"	30"	60"	15"
30"-45"	TL	154"	34"	30"	60"	15"
30"-60"	TL	154"	34"	30"	60"	15"

TEES

TEES	6"	8"	10"	12"	14"	16"
6"x6"x6"	12"	24"	24"	18"		
6"x6"x8"	12"	24"	24"	18"		
6"x6"x10"	12"	24"	24"	18"		
6"x6"x12"	12"	24"	24"	18"		
6"x6"x14"	12"	24"	24"	18"		
6"x6"x16"	12"	24"	24"	18"		
6"x12"x6"	12"	24"	24"	18"		
6"x12"x8"	12"	24"	24"	18"		
6"x12"x10"	12"	24"	24"	18"		
6"x12"x12"	12"	24"	24"	18"		
6"x12"x14"	12"	24"	24"	18"		
6"x12"x16"	12"	24"	24"	18"		
6"x12"x18"	12"	24"	24"	18"		
6"x12"x20"	12"	24"	24"	18"		
6"x12"x22"	12"	24"	24"	18"		
6"x12"x24"	12"	24"	24"	18"		
6"x12"x26"	12"	24"	24"	18"		
6"x12"x28"	12"	24"	24"	18"		
6"x12"x30"	12"	24"	24"	18"		
6"x12"x32"	12"	24"	24"	18"		
6"x12"x34"	12"	24"	24"	18"		
6"x12"x36"	12"	24"	24"	18"		
6"x12"x38"	12"	24"	24"	18"		
6"x12"x40"	12"	24"	24"	18"		
6"x12"x42"	12"	24"	24"	18"		
6"x12"x44"	12"	24"	24"	18"		
6"x12"x46"	12"	24"	24"	18"		
6"x12"x48"	12"	24"	24"	18"		
6"x12"x50"	12"	24"	24"	18"		
6"x12"x52"	12"	24"	24"	18"		
6"x12"x54"	12"	24"	24"	18"		
6"x12"x56"	12"	24"	24"	18"		
6"x12"x58"	12"	24"	24"	18"		
6"x12"x60"	12"	24"	24"	18"		

NOTES:
 1. 2" & 4" FITTINGS EQUIVALENT TO 6" FITTINGS.
 2. TAPPING SLEEVES TO HAVE BACKING BLOCKS SAME SIZE AS REQUIRED FOR TEES.
 3. "TL" = TOTAL LENGTH OF FITTING MINUS CLEARANCE FOR BELLS.

INTERNAL WATER PRESSURE 6" through 12"=200 psi
 INTERNAL WATER PRESSURE 14" through 30"=210 psi
 BEARING PRESSURE OF SOIL=2000 psi

BACKING BLOCKS
NOT TO SCALE

CITY OF O'FALLON
ENGINEERING DEPARTMENT
O'FALLON, MISSOURI

BACKING BLOCK DETAILS AND LOCATIONS

PLACE CONCRETE AGAINST UNDISTURBED EARTH (EXCEPT ACROSS NEW PIPELINE TRENCH WHEN EXIST SANITARY SEWER IS ENCASED)

ACTUAL TRENCH SIDE SLOPE TO BE DETERMINED BY CONTRACTOR IN ACCORDANCE WITH OSHA STANDARDS. CONCRETE MAY BE PLACED AGAINST PERMANENT STEEL SHEETING

CONCRETE ENCASEMENT

SEE PLAN AND PROFILE SHEETS FOR LENGTH. PROVIDE ENCASEMENT TO BELL.

NEW PIPELINE OR EXISTING SANITARY SEWER

CONCRETE ENCASEMENT

12" MAX

5/8" CONT. (TYP)

#3 U-BARS @ 1'-6" CENTERS

8" PIPE

MIN OD MIN

SECTION

ELEVATION

NOTES:
 1. AT LOCATIONS WHERE THE TRANSMISSION MAIN CROSSES AN EXIST SANITARY SEWER, SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
 2. WHEN THE PIPELINE IS PROTECTED WITH POLYETHYLENE TUBE ENCASEMENT, THE CONCRETE ENCASEMENT IS TO COVER THE POLYETHYLENE ENCASEMENT.

CONCRETE ENCASEMENT
NO SCALE

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CONCRETE ENCASEMENT DETAILS

ISSUE REMARKS/DATE
 1 3-21-17 INITIAL SUBMITTAL
 2 6-6-17 REVISED PER CITY COMMENTS
 3 7-20-17 REVISED PER CITY COMMENTS
 4 8-7-17 APPROVAL

ANCHORING COUPLING

STANDARD M.J. BELL

DETAIL "A"

VALVE

TRENCH WIDTH

REMOVE PIPE COATING PRIOR TO

24" MIN. OR EQUAL TO TRENCH WIDTH

DUCTILE IRON PIPE

CADMIUM PLATED 5/8" READY RODS-4 MIN

(SEE NOTE FOR OPTION)

VALVE

NOTE: IN LIEU OF READY RODS AS SHOWN, CONTRACTOR CAN USE RETAINER GLANDS OR USE A STANDARD MECHANICAL JOINT BELL END WITH A MECHANICAL JOINT ANCHORING COUPLING (HYDRANT ADAPTER) TO TIE VALVE TO MAIN. (SEE DETAIL "A")

FOUR CONCRETE AGAINST UNDISTURBED EARTH

PIPE SIZE "D" MIN.

6"	4"
8"	7"
12"	15"

STRADDLE BLOCK DETAIL
NOT TO SCALE

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STRADDLE BLOCK DETAILS

45' MIN TO 90' MAX. (TYP)

UNDISTURBED SOIL

PIPE OF MATERIAL SPECIFIED

TRENCH WALL

CONCRETE THRUST BLOCK

PIPE EMBEDDED MATERIAL

FINISHED GROUND SURFACE

2'-0" MIN

SECTION

PLAN

NOTES:
 1. AREA OF BLOCK, A = BH. BLOCK AREAS ARE SHOWN ON GENERAL LAYOUT OR TABLE.
 2. B = h = \sqrt{A} , EXCEPT WHERE TOP OF BLOCK IS WITHIN 2 FEET FROM GROUND SURFACE, THEN B = A/h.
 3. MINIMUM BLOCK DIMENSION (B & h) SHALL BE AT LEAST OD OF PIPE OR 1 FOOT FOR PIPE OD 12" OR LESS.
 4. THE BOTTOM OF THE BLOCK SHALL EXTEND AT LEAST TO THE BOTTOM OF THE TRENCH IN ALL CASES.
 5. L-FITTING LENGTH MINUS CLEARANCE FOR BELLS.
 6. DETAIL IS SHOWN FOR CAST IRON PIPE; DETAIL IS SIMILAR FOR OTHER TYPES OF PIPE.
 7. DIMENSIONS FOR THRUST BLOCKS FOR FIRE HYDRANT ASSEMBLY ARE SHOWN FIRE HYDRANT ASSEMBLY DETAIL.

SIZE	BEND	THRUST AREA	B	H
18"	31 1/2"	4 SF	2'	2'
18"	45"	8 SF	2.8'	2.8'

CONCRETE THRUST BLOCKING
NOT TO SCALE

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O'FALLON, MISSOURI

CONCRETE THRUST BLOCKING DETAILS

VALVE COVER AND LID

2'-0"

2'-0"

TOP VIEW CONCRETE COLLAR
NOT TO SCALE

NOTE: 1. Concrete collar joint pattern is required in paved areas such as roadways, driveways, sidewalks or other areas of paved surfaces.
 2. Concrete collars are optional in other non-paved areas.

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CONCRETE COLLAR DETAIL

Concrete collar will be in accordance with the Concrete collar detail.

2" SQUARE CONCRETE COLLAR

TOP FLUSH WITH FINISH GRADE

FINISH GRADE

3" MAX.

Tracer Wire

STANDARD 2" SQUARE VALVE OPERATING NUT

WELD

GRAVEL SHIELD 1/4" STEEL 5 1/4" DIA.

1" COLD ROLL STEEL

6" C.I.P. OR CLASS 150 P.V.C. RISER

SOCKET FROM 1/4" STEEL INSIDE DIA. 2-3/16" x 3" DEEP

VALVE BASE TO BE USED ON ALL VALVES, AND SHALL BE INSTALLED ON COMPACTED BACK FILL AT A MINIMUM OF 4" ABOVE THE VALVE FLANGE.

NOTE: I.D. NUMBER FOR MATERIAL REFERS TO WATER DEPT. STOCK NUMBER.

WATER VALVE DETAIL
NOT TO SCALE

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WATER VALVE DETAIL

CONCRETE THRUST BLOCK

CONCRETE THRUST BLOCK

VALVE

BACK OF CURB

CENTERLINE OF FIRE HYDRANT

CENTERLINE OF WATER

3'

2' min.

CONFIGURATION
 ALL FIRE HYDRANTS SHALL BE 3' OFF BACK OF CURB
 ALL WATER MAINS SHALL BE A MIN. OF 5' OFF BACK OF CURB

TYPICAL WATER MAIN AND FIRE HYDRANT LOCATIONS
NOT TO SCALE

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WATER MAIN FIRE HYDRANT DETAIL

GROUND LINE

MANHOLE

(SPECIFY OUTLET)

MAIN GUARD 2" BLOW-OFF HYDRANT (SPECIFY DEPTH OF BURY)

CRUSHED ROCK

UNDISTURBED EARTH OR THRUST BLOCK

TRACE WIRE

2" BRASS STREET "L" (NOT BY KUPFERLE FOUNDRY)

BLOW-OFF HYDRANTS SHALL BE NONFREEZING, SELF DRAINING TYPE, WITH AN OVERALL LENGTH OF 2'. SET UNDERGROUND IN A METER BOX. THESE HYDRANTS WILL BE FURNISHED WITH A 2" FIP INLET, A NON-TURNING OPERATING ROD, AND SHALL OPEN TO THE LEFT. ALL OF THE WORKING PARTS SHALL BE OF BRONZE-TO-BRONZE DESIGN, AND BE SERVICEABLE FROM ABOVE GRADE WITH NO DIGGING. THE OUTLET SHALL ALSO BE BRONZE AND BE 2-1/2" NST. HYDRANTS SHALL BE LOCKABLE TO PREVENT UNAUTHORIZED USE AS MANUFACTURED BY KUPFERLE FOUNDRY CO., ST. LOUIS, MO, OR APPROVED EQUAL.

(SPECIFY OVERALL LENGTH 6" SHORTER THAN NORMAL DEPTH OF BURY. MINIMUM OPENING IN METER BOX SHOULD BE 10")

BLOW-OFF HYDRANT
NOT TO SCALE

CITY OF O'FALLON
ENGINEERING DEPARTMENT
O'FALLON, MISSOURI

BLOW-OFF HYDRANT DETAIL

PROJECT TITLE

COBBLESTONE CROSSING
O'FALLON, MISSOURI

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5055 New Baumgartner Road
St. Louis, Missouri 63129
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WATER MAIN DETAILS

P+Z No. 29-16.01
City No.
Date: Aug. 7, 2017
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